

# Duwamish River



# Cleanup Coalition

Community Coalition for Environmental Justice • Duwamish Tribe • Georgetown Community Council • Green-Duwamish Watershed Alliance ECOSS • People for Puget Sound • Puget Soundkeeper Alliance • Washington Toxics Coalition • Waste Action Project

January 6, 2006

Ms. Karen Keeley  
U.S. Environmental Protection Agency  
1200 Sixth Avenue, ECL-111  
Seattle, WA 98101

**Re: Draft Lower Duwamish Waterway Slip 4 Early Action Area Engineering Evaluation/Cost Analysis**

Dear Ms. Keely:

Thank you for the opportunity to review the initial draft of Seattle and King County's EE/CA for the Slip 4 Early Action Area. DRCC represents ten environmental, community, tribal and small businesses organizations affected by the contamination and cleanup of the lower Duwamish River, and collectively serves as the Community Advisory Group to EPA on the Superfund site cleanup. We have conferred with the City and County on the preferred alternative, have reviewed the draft EE/CA and have the following comments.

**General Comments**

The organizations and communities represented by the Duwamish River Cleanup Coalition have grave reservations about cleanup plans for the Duwamish River that leave substantial volumes of PCBs and other persistent toxins in place. The proposed cleanup alternative for the Slip 4 Early Action Area leaves significant volumes of PCBs at depth (up to 475 ppm at the dredge cut and 690 ppm at greater depths). Given the location of the Duwamish River site directly over the Seattle fault, any chemicals left at depth are at risk of release to the environment and the public in the event of a significant seismic event. For that reason, we prefer all PCBs and similarly toxic substances be removed from the river basin, rather than buried under a cap that may be subject to future seismic or other catastrophic events. In addition, given the relatively short history of engineered remedial caps (~20 years), it is also unknown whether the integrity of such caps will erode or prove sufficiently protective over time. As a general policy, we do not support EPA's policy of allowing such materials to be capped in place.

Given EPA's policies and past decisions on remedial caps, we expect the agency to allow some capping at the Slip 4 Early Action Area, despite the issues raised above. For that reason, our comments will focus on the recommended alternative (Alternative 2) presented in the Draft EE/CA. The recommended alternative has our qualified support, with the adjustments described below, as the best alternative short of removing all PCBs from the river. We also recognize the logistical and engineering difficulties, as well as cost, of full contaminant removal in the slip. While we would not support such capping of PCBs in place

in the main river channel, our support for the recommended alternative is based in part on engineering considerations, as well as the relatively contained geography of the Slip 4 site.

All possible measures should be taken to ensure the stability and impermeability of the cap to chemical migration, and the final EE/CA and EPA cleanup order need to clearly articulate the responsibility of the City of Seattle and King County to maintain and repair the slip in the event of a breach.

## **Alternative 2/Recommended Alternative**

### *Dredge Boundary and Cap Depth Adjustments Needed*

The 2004 subsurface data from Slip 4 shows highly elevated PCBs at depth at stations SCO2 and SCO3. The proposed dredging plan does not include the area around SCO3, but does include the area at SCO2, barely. These two reference points are used to characterize the nearly 150 foot swath of sediment between the two cores, but treatment of these sediments ranges from partial removal to capping entirely in place.

We recommend three adjustments to the proposed dredging and capping plan to better protect the environment and the public against the possible future release of contaminants:

1. Extend the dredge cut southwest of 2+80 directly across the slip channel, removing PCBs in the vicinity of and southwest of SCO2. It appears that the current dredge cut was based on the slip elevation contours, however part of the deeper contour is to be removed under the current plan. We recommend the removal area within this contour be expanded. This removal should extend across the channel to capture all PCBs at levels similar to that at SCO2 within this area.\*
2. Dredge deeper to remove the highest level PCBs at depth in the dredged area in the center of the channel around SCO2. Limited and targeted deeper dredging in this area will not cause destabilization of the slopes at the side of the slip; these sediments can be addressed as a mid-channel hotspot removal.\*
3. SCO3 is in a deeper area of the slip proposed for capping only. Given the high level PCBs at depth, this area should be either dredged or at least treated with a thicker cap if PCBs are to be left in place. Removal of these high level PCBs is preferable. The draft EE/CA does not present an alternative based on removing the highest level PCBs (hotspots) within the Slip, which is a shortcoming of the EE/CA and would certainly include the area around SCO3. The current capping plan calls for a 3 foot cap following the bottom contour of the slip. If highly contaminated sediments from this area are not removed, the cap here can and should be thickened, providing a more protective barrier for PCBs which range above 500 ppm, while simultaneously maintaining and possibly improving the proposed habitat enhancements to the slip.\*

\* In order to better inform and design for these adjustments, additional core samples should be taken in the area between SCO2 and SCO3. This will allow determination of whether the core locations represent isolated hotspots, or a continuous region of high level PCBs, providing better data upon which to determine if dredging or thicker capping is appropriate.

Additionally, the final plan should use confirmatory sampling at the dredge cut to ensure that high PCB levels targeted for removal are fully excavated, e.g., the top interval of SCO4 measured at 475.1 ppm in Figure 5-8 should be fully removed – samples at the dredge surface should not exceed 189.1 ppm, or roughly 200 ppm at most.

### **Source Control**

Additional investigation and source control is needed prior to cleanup of Slip 4. DRCC will be reviewing the Department of Ecology's Source Control Action Plan for the Slip 4 Early Action Area, but currently has serious concerns about conducting a cleanup prior to implementation and confirmation of success of a source control plan. Given recent PCB results from the Steam Plant flume and numerous Boeing Plant 2 drains, cleanup may be premature. While the quickest possible cleanup is of critical importance, the cleanup must be ensured over the long term. In the event of recontamination, the public will have to bear any returning risks for an unacceptably long period, if the recontamination is cleaned up at all, and will bear the cost of the additional cleanup. Source control must be assured prior to cleanup of the Slip 4 Early Action Area.

In addition to the data collected to date, the source control effort will need to include an evaluation of the data from the Boeing Plant 2 groundwater wells along the southern border of the slip. To date, this information has not been provided in any public documents. The in line sediment data from all drains to the slip also need to be collected with more accurate and sensitive equipment than currently being employed for investigations along the Duwamish. Engineered, more efficient sediment traps for measuring contaminant levels throughout the CSO and storm drain system are available and should immediately replace the cruder and less accurate traps currently employed.

### **Seep/Groundwater Investigation**

Only one seep has been analyzed for chemicals within Slip 4, despite an extensive stretch of seepage along the southern border of the slip. Additional seep sampling should be conducted and analyzed for chemical constituents prior to design of the Slip 4 remedial cap. Contaminated seeps have caused contamination within remedial caps at the West Eagle Harbor (Wycoff) Site, and the possibility of contamination in seeps from the properties bordering Slip 4 needs to be further investigated prior to cleanup.

### **Habitat Value and Protection**

The recommended alternative (Alternative 2) offers the highest habitat value of the alternatives presented. However, several safeguards need to be in place to ensure that the habitat performs as anticipated.

Clear requirements to maintain and repair the constructed habitat must be included in the EE/CA and EPA cleanup order. Estimates of the area expected to be subject to scour near the outfall(s) should be presented, the scour footprint should be minimized through optimal

design and channeling of the scour pathway, and clear commitments to maintain and repair the habitat areas outside of the designated scour footprint need to be included in the EE/CA. In addition, EPA should include clear administrative requirements in its cleanup order that the habitat area and quality in the recommended alternative be maintained.

Increasing the cap depth at the area around SCO3, as recommended above, may have the additional benefit of providing for even more high value habitat than currently proposed.

### **Cap Adequacy/Monitoring**

Several caps for which core monitoring data has been collected have shown some contamination within the remedial cap. A discussion of caps for which core data has been collected should be included in the EE/CA, along with an explanation of the causes of contamination and a discussion of any issues that require further investigation at Slip 4. For example, the East Eagle Harbor site shows contamination increasing with depth within the cap. A likely cause is upmigration of PAHs through the cap from contaminated sediments below. Are there sufficient PAHs at depth in Slip 4 to investigate further? Another area that may require additional investigation at Slip 4 is whether there is sufficient hydraulic force in any of the bank or groundwater seeps to disturb the cap or force either dissolved or particulate contaminants into or through the cap. Monitoring data from the groundwater wells along the southern border of Slip 4 on the Boeing property need to be examined and presented in the EE/CA in order to evaluate the potential for contaminated groundwater to enter the cap, as well as for source control purposes. Finally, the EE/CA should include a clear requirement that core monitoring will be performed for the Slip 4 remedial cap.

### **Dredging Containment/Residuals**

The Draft EE/CA states that few precautions need to be taken during dredging at the Slip 4 site to prevent the spread of contaminated sediments or residuals. This is unacceptable and should be revised. Given the geography of the Slip 4 site, it is relatively easy and cost-effective to take measures to contain contaminants during dredging in Slip 4. Either silt curtains or a temporary retaining wall should be employed to prevent migration of contaminated sediments to the outer slip and the river. While silt curtains are not effective in all environments, the lack of pass through currents and the contained geography of the slip make them relatively simple to employ and more likely to be effective at Slip 4. We recommend physical containment with silt curtain or similar barrier, and frequent water quality monitoring at the border and before the slip enters the river. These measures may have the added benefit of restricting fish access to the inner slip during dredging and cap construction as well.

### **Sediment Treatment**

The section on Alternate Treatment Methods is riddled with suppositions, inaccurate and unsubstantiated information. We understand that the source of the text in this section is RETEC's 2005 Candidate Technologies Memorandum for the Lower Duwamish River, however, we have previously communicated our concerns about finalizing this document

precisely because of its expected application in the planning of Early Action Area cleanups. The faulty portions of the CTM document should not be reiterated here; the Slip 4 EE/CA is a stand alone document and should reflect the best and most accurate information currently available on the subject of alternate treatment methods.

1. Evaluation – Page 65: “[Biogenesis’s] effectiveness is unproven.” This statement is incorrect. While any treatment technology would need to be assessed for its applicability to a specific site, the effectiveness of the Biogenesis technology has been established through a series of bench and pilot tests conducted by EPA and is currently in full-scale commercial application at an EPA-sponsored demonstration project. The statement that the technology “is not cost effective” also needs to be qualified with the statement “given current market conditions in the Northwest.” Cost-effectiveness of the technology is one of the measures EPA has used to evaluate the viability of the Biogenesis process, and with the products and markets developed for the end products in the northeast, the technology is in fact proving cost-effective.
2. Effectiveness – Page 65: It is supposition to state that “It is unlikely that this fines fraction could be sufficiently cleaned to overcome the strict institutional barriers to any beneficial reuse...” First, without a treatability test, it is unknown what the removal efficiency would be for the slip 4 sediments. Second, the statement refers only to “beneficial reuses” that return the treatment sediments as fill to aquatic or upland natural environments, whereas many reuse applications are in product development, not natural environments.
3. The EE/CA should note that because PCB concentrations are higher in Slip 4 than in the New Jersey pilot test, and because the grain size in NJ was considerably finer than that in slip 4, the removal efficiency for PCBs may well be higher for the Slip 4 sediments. If Biogenesis was considered feasible and cost-effective in the NJ case, then the only apparent barrier to its use on the Duwamish is product and market development – a significant barrier, but not one related to treatability.
4. The draft EE/CA states that “the vendor has not been able to provide mass balance information from the previous testing, and it is not known how much of the PCBs would simply be transferred to other waste streams such as sludges and wastewater.” Eric Stern, EPA Region 2, states that EPA themselves have conducted mass balance testing on the Biogenesis technology, with favorable results (e.g., no unaccounted for secondary waste streams). This information should be added to the EE/CA; the section as it stands is misleading and incomplete, and appears to reflect a lack of adequate research on the part of the authors rather than a lack of mass balance data for the Biogenesis technology. References to “other waste streams” from soil washing requiring treatment or disposal on page 66 (par. 3) should also be stricken or amended after reviewing EPA Region 2’s mass balance data.
5. DRCC notes that according to the “Treatability Testing Approach and Timing” box on page 67, bench and pilot testing could both be completed within 18 months. Cleanup of Slip 4 is currently not scheduled to begin until 2007, conceivably allowing time for both bench and pilot testing prior to implementation without additional delays.

**Additional Comments**

Page 16: Site Characterization, Biota, Salmonids

NOAA has recently completed study on salmonid PCB levels which should be included here.

Page 22: Summary of Environmental Data, Sediment Investigations, Comparison of Historical and 2004 PCB Results

It is critical that the City, County, EPA and Ecology determine whether the decline in surface sediment PCB concentrations is due to source control improvements or physical processes. This determination has major implications for remedial design as well as determining additional source control needs for the site.

Thank you for the opportunity to comment on the Draft Slip 4 Early Action Area EE/CA.  
Please do not hesitate to contact us if you have any questions.

Sincerely,

*BJ Cummings*

BJ Cummings  
Coordinator